

AMERICAN VETERINARY REVIEW,

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EDITORIAL.

MCGILL UNIVERSITY'S NEW FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.—The Montreal Veterinary College definitely absorbed by McGill University—will the profession gain by the change?—Prof. McEachran's grand efforts and grand professional results—our compliments and our regrets. PAQUIN VACCINE LABORATORY.—Our past references to the necessity for such institutions—efforts in that direction—the opening offered to veterinarians and biopathologists—the work of Drs. Faust and Salmon and Professor Law—claims of the new laboratory—hopes and wishes for its success—this depends on the material produced—vaccines have proved their value. DIARRHOEAS AND SCOURS.—Dr. G. A. Stockwell's article—a comparative pathologist is a veterinarian—the treatment recommended—pepsin as the basis—Parke, Davis & Co.'s preparations—reports of their uses—results obtained—more wanted.

MCGILL UNIVERSITY'S NEW FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.—This is the title of a long article in the *Montreal Gazette*, giving notice of a change in the constitutions of McGill University and the Montreal Veterinary College, by which these institutions become united into a single organization which shall combine and consolidate the resources and advantages of both of the uniting schools. Whether this change will result in a gain or loss to the profession is a question which time alone can ultimately determine. Prof. McEachran has worked hard for years, and had succeeded handsomely in establishing a veterinary school in Canada, and if the classes in attendance did not count their students by hundreds, his graduates were, nevertheless, well reputed, and enjoyed the confidence and received the unhesitating recognition of all the veterinary or-

ganizations in the country. But though the Montreal Veterinary College is gone, it is succeeded by a new faculty at the McGill, which, moreover, covers an enlarged field of instruction, as its title indicates, of a "faculty of comparative medicine and of veterinary science." We congratulate Professor McEachran upon this change, if it is to result in a benefit to the profession, but we cannot part with him as the learned principal of the school of which he was the founder, without an expression of our profound regret.

PAQUIN VACCINE LABORATORY.—Those of our readers who have followed and appreciated the course of the REVIEW in bringing forward for examination and discussion the various subjects of importance and interest to the profession which are suggestively involved in the current reports of the progress made in the study of comparative medicine and pathological physiology, will remember our repeated calls upon the profession for the qualified men who should undertake to discharge the duties which were gradually and still are imposing themselves upon the veterinarians throughout the country.

Satisfied as we have been for years of the great value of Pasteur's discoveries, and of the immense benefits which might be derived from their proper improvement, and the incalculable advantage which the veterinarian and bio-pathologist might confer on the profession through their application to the animals entrusted to their care, we have again and again pleaded for the introduction of a systematic and general practice of preventive inoculation in the treatment of the contagious diseases of our animal patients. We have urged our brethren to enter upon a course of experiments in that direction, and we have imported and offered to furnish our colleagues gratuitously with a supply of matter for inoculation, and we have at last earnestly asked of our friends who have charge of large experimental laboratories, to work, prepare, test and furnish the profession with the viruses and cultures which are now *known, beyond possible and reasonable doubt*, to protect animals against the dangers of infection and contagion. To this day, however, our exertions have re-

mained almost entirely fruitless. It is true that Dr. Faust, of Poughkeepsie, made a few experiments with some virus of anthrax which we had obtained for him from the laboratory of Cornevin, at Lyons, and it is also true that Dr. E. Salmon and Professor Law had also, we believe, worked in that direction, but without any public announcement of results. It would undoubtedly be a great satisfaction for all veterinarians to know that at least one establishment has been formed and a laboratory established where matter can be obtained for at least one disease—anthrax, for example, under both of its forms. The Paquin Vaccine Laboratory of Columbia, Mo., is now offering these vaccines. We are not prepared to decide upon their quality, but when it is considered that Dr. P. Paquin is at the head of the work, we are justified by his past professional life in believing that he would not take the stand he assumes in his advertisement without having taken all strictly necessary precautions, in the form of laboratory tests and experiments, and the practical applications upon which must depend the entire value of the products in question, and the sole guarantee of their success when properly used. Failures in the use of vaccines may mean failures of the manipulations or methods of the laboratory, but they cannot disprove the efficacy of the principle of prophylaxy. It has been tested too extensively in Europe for any doubt on the subject, and we cannot fail to succeed here under proper conditions. Will not others imitate Dr. Paquin?

DIARRHOEAS OR SCOURS.—In a former number we printed a long and interesting article on the subject of the diarrhoea or scouring of nursing animals, such as colts, calves and lambs, which we trust has proved of great interest and value to our readers. Though not a veterinarian, Dr. G. A. Stockwell, the author, is a comparative pathologist (a correct designation, in our opinion, for a true veterinary scientist), and the manner in which, in a general point of view, the subject of his article is treated, furnishes good evidence that he has carefully observed the peculiarities pertaining to the disease in question. The treatment which he recommends, whether in respect to the hygienic measures or to the therapeutic

means, are full of wise suggestion, and the remarks which he offers relating to the use of digestive preparations, or of stomachic compounds, and principally of pepsins, should not be ignored by those who may be called to treat youngsters affected by diarrhœa. The preparations of pepsine which are offered for sale by the house of Parke, Davis & Co., of Detroit, seem to possess all the qualities required by the indications, and from statements we have already received of the good results obtained by the use of the *concentrated glycerole*, and of the *elixir*, we believe that we have done well in bringing the subject before our readers. The reports which we have now at hand are few, but are very satisfactory, and we would be pleased to hear further from those who may have opportunities to try them. Though these preparations have not yet entered very largely into veterinary practice, having been principally confined to the domain of human medicine, the comparative pathologist cannot ignore them, and is in duty bound to the profession to try for himself whether their use is not followed by adequate benefit in his own sphere of observation and knowledge.

ORIGINAL ARTICLES.

HOW DO MICRO-ORGANISMS CAUSE DISEASE?

Based upon an address by Ludwig Brieger to the Sixty-second Versammlung Deutscher Naturforscher u Aertzte.

By WM. S. GOTTHEIL, M.D., Professor of Surgical Pathology to the American Veterinary College.

The latter half of the nineteenth century will be known in medical annals as the era of etiological discovery. We have, indeed, of late years grown so accustomed to results which in former times would have been considered the medical wonder of the age, that they pass by us almost without our knowledge, and certainly without our appreciation of their importance. If we reflect that but a few years ago the rationale and exact cause of an immense class of diseases, in-

cluding some of the most important and common that affect man and animals, was absolutely unknown to us ; that to-day we possess very definite and accurate information on these points in the majority of them ; that month by month, and almost day by day, our knowledge concerning them becomes more and more extensive, more and more precise, we shall, perhaps, appreciate a little more correctly the immense advances that scientific medicine has made in the last three decenniums.

Starting from the broad and firm basis of experimental physiology and pathological anatomy, we may to-day divide all known maladies into the following four groups :

1. Diseases of traumatic origin.
2. Diseases of infection.
3. Diseases due to nutritive changes.
4. Neuroses.

Of course there is no essential difference between the origin of classes one and two. Micro-organic infection is a traumatism of the cells. But it is convenient to separate those affections that are due to rough macroscopic influences from those due to the less visible and secret injuries inflicted by the microbes on the cells. Classes three and four are those about whose rationale we know least ; but they are also those that suffer most from the discoveries that are made. The number of neuroses and nutritive diseases diminishes continually, as disease after disease is found to belong among the infectious. As far as the neuroses are concerned, it is well understood that the class is only a provisional one. The change may be so minute as to elude our grasp for a long time to come, but we may venture to affirm that there probably is an actual change of tissue in every case, and when there is such a change there must also be a cause for it.

Three names stand pre-eminent in the history of our knowledge of the infectious diseases. The first is that of the man who discovered the specific microbes that cause the fermentations, alcoholic, acetic, lactic, by means of which alone the life of the higher animals becomes a possibility.—*Pasteur*. The second is that of *Lister*, who adapted and utilized these

discoveries, and by this means placed practical surgery in a position of scientific accuracy undreamed of in former times. And the third is that of *Koch*, whose systematic methods and far-reaching discoveries opened the paths of limitless improvement which practical medicine has but just begun to tread.

Wherever we turn in nature, the activity of the bacteria is apparent. All the fermentations, all the putrefactions, most of the processes by which insoluble and non-assimilable material is prepared for the use of the higher bodies, many pathological processes—all are due to microbic life. The microbes live upon matter, and secrete or excrete, as you will see from the various chemical substances that form the essence of these changes. The *chemical action of the micro-organisms* is the key that will unlock for us many of the most secret processes of nature.

The putrefactions were first thoroughly studied. A multitude of bodies, mostly poisonous, indol, skatol, cresol, carbolic acid, were discovered to be formed by the successive broods of microbes that lived upon the putrefying material, and upon each other. They were called ptomaines or toxins. Soon these same products, these same organisms, were found in the human alimentary canal, and the whole intestine was found to be simply an immense centre of putrefactive change.

Nevertheless, under normal conditions, these organisms and the poisons they produce do no harm. The chemical substances unite with the sulphur compounds, and become harmless. If, however, as in hyaemia, scarlatina, diphtheria, intestinal diseases, etc., the normal activity of the tissues is impaired, the putrefactive products are not neutralized, and they appear unchanged in the excreta.

From the putrefying flesh of men, horses and cattle a long list of poisonous ptomaines has been obtained. Neuridin, cadaverin, putrescin, midatoxin, typhotoxin, neurin and methyl-guanidin are some of them. They are all bacterial products. Thus the harmless creation, formed as a proximate principle in the flesh of all mammals, becomes, through the oxidizing power of the bacteria, methyl-guanidin, a violent poison that kills with convulsions of all the muscles.

Fishes, when they have begun to putrefy, exhibit a long list of poisons, some extremely violent, and putrefying albumen, cheese, and many other things show similar products.

It is, therefore, not surprising that we read every now and again in the journals of cases of food poisoning, whole communities being sometimes affected. Thus four years ago there was a general poisoning of the population in Wilhelmshafen in Germany, which was traced to the use of a certain species of mussel which abounded in the harbor of that port. It is needless here to recount the symptoms of the poisoning that ensued, and which seemed to affect the nervous centres and especially the Leuconium and the motor tract. Multitudes of the patients died, many of them after eating but five or six mussels. It was soon found that the injection of a decoction of these mussels under the skins of animals killed them with the same symptoms. Finally, a poison, found only in these mussels at that time and called *mytilotoxin*, was isolated.

In this same way all dead animal tissues are used by the successive broods and crops of microbes, who split up the complex albuminous molecules into simpler and even simpler products, until finally, in the comparatively non-complex combinations of oxygen, hydrogen and carbon, they are in such shape that they can be used by both the animal and vegetable world, and can again begin their cyclic changes. Of especial interest to us is the fact that these ptomaines and toxins are extremely similar in chemical reactions to the vegetable alkaloids, a fact of the greatest importance in medical jurisprudence.

Nor are the pathogenic bacteria behind their putrefactive brethren in the production of these poisonous chemicals. The cocci of suppuration, *staphylococcus pyogenes aureus* and *streptococcus pyogenes*, cause the well-known blood-poisoning, pyaemia and septicaemia, by the products of their life action. Ammonia, trimethylami, phlogosin and others not yet studied, are known to be formed.

The typhus bacillus produces the specific typhotoxin, which kills by paralysis of the muscles, and is accompanied by salivation and gastritis.

The cholera bacillus produces penta-methyldiamin, tetra-methyldiamin, methyl-guanidin, and other poisons. These cause the profuse diarrhœas, the uncoagulability of the blood, the alidity and muscular spasms, the peculiar odor of the dejecta and of the breath.

The microbic cause of tetanus is proven to be present everywhere in nature. *Tetanin* has been gotten pure from the newly amputated arm of a tetanic patient, and is one of the four poisons that the bacillus produces and that cause the dreadful symptoms of that malady.

The *anthrax bacillus* produces ammonia and the poison methyl-guanidin.

But besides these admittedly bacterial diseases, there are others more mysterious and of unknown origin. They are caused by some chemisen of the body, of the nature of which we are ignorant. In some of them products have been found that point immediately to microbic activity; organic poisons that are doubtless due to the life-action of some yet unknown organism. Brieger has studied them in cystinurea and other nutritive diseases, and also in leukæmia and the blood changes.

Thus the action of the micro-organisms on the body is due to the poisons they produce, and the question of infection by any given kind depends on the susceptibility of the organisms that they attack. This susceptibility is greatly diminished by one dose of the poison, and hence the success of the various vaccine experiments that have been made.

But so long as we vaccinate with the organism or virus itself, or modifications of it, our work must necessarily be unscientific and inexact. Along with the specific poison, the ptomaines or toxine, we introduce into the body an unknown number of others, and also the micro-organisms themselves. We need only inoculate the one poison against whose more virulent attack in larger and more concentrated dose we desire to protect the organism. This we shall be able to do when we can isolate and prepare in chemical purity the ptomaines and the toxines. Then will medicine—the science—begin to purge itself of the old and merited reproach of empiricism.

COMPLICATED CASE OF PNEUMONIA AND GLANDERS.

By H. A. HEISNER.

A paper read before the Veterinary Society of the University of Pennsylvania.

Mr. President and Gentlemen :

I beg leave to occupy a few moments of your valuable time to call attention to a very peculiar case I was called upon to treat the past summer at my home in Baltimore. I think it a very interesting case, if not an instructive one, as I have never seen nor heard of a similar one before.

The patient in question was a bay gelding eight years old, well bred and used exclusively for pleasure, as he was a fast roadster. I was asked by a friend of the owner to examine the horse and treat him if I could do so, and in company with this gentleman I called at the stable, where we were met by the owner, who stated that he had sent his horse out to pasture; all the history I could obtain was that during the previous four weeks the animal had been treated by three quacks or horse doctors.

What the first one treated him for I do not know. The latter two, however, treated the animal for kindey trouble, as I was told they diagnosed it, and it was upon the advice of the last one who treated the animal previous to my first visit that the owner sent the horse into the country, this quack having told him that this would be all that was necessary to perfect a cure. Such is all the history I could glean from the owner. However, I went out to see the horse, and after carefully noting the posture assumed by the animal, who was standing back in his stall with the head extended on end of halter strap, I proceeded to make an examination of the animal and noticed the following symptoms, which at once convinced me that the quacks had made a serious error in their diagnosis.

Symptoms were: Animal dejected; visible, mucous membranes congested: temperature $103\frac{1}{2}^{\circ}$ F.; respirations accelerated, pulse quickened and weak; on auscultation heard crepitant rales and on percussion elicited dullness over both

lungs; on noticing nostrils a slight discharge of a rusty sputa character was observed, which, however, disappeared in a few days.

These symptoms I deemed sufficient to make a diagnosis of pneumonia, and I treated the animal accordingly. The following was my treatment: First, I bled from the jugularis, taking about eight quarts of blood, as the horse was in tolerably good condition notwithstanding the fact that the character of the pulse contra-indicated depleting. Next I applied sinapism over sides of chest and belly, gave spiritus aetheris nitrosi $\frac{3}{4}$ i in each bucket of water, used the salts of potassium and for weak heart administered F. E. digitalis in drachm doses, gave stimulents; small doses of sulphate of soda were given occasionally to stimulate the digestive tract and prevent constipation; gave carrots, apples and etcetera, to coax the animal to eat.

To this treatment, including good hygienic surroundings, the animal responded, and to all intents made a good recovery. But when allowed to run at grass with other horses, it was noticed that he would not eat grass, neither would he stay with the other animals, but would wander off to a secluded spot where he would make a path about thirty feet in length and pace to and fro the entire day, never deviating from this path. He never walked in a circle, neither in the stable where he had a box stall, nor in the field. Upon hearing of this I arrived at the conclusion that there was a brain lesion existing which caused this peculiar wandering, so I gave the horse a purge in form of an aloes bolus and followed this up with the mild chloride of mercury and bicarbonate of soda for about two weeks, at the end of which time I found a decided change for the better. He would play, so to speak, with the other horses, his wanderings ceased, he began to eat grass and when given an apple would follow you around, which is something he would not do before. I ordered this treatment to be continued for another week and left the case as recovered.

One week following being Sunday, the owner saw the horse and was so pleased with his condition that he said he

would get the animal home and begin driving him in a few weeks. I mention this as evidence that there did not exist at this time any sign of the disease I am about to speak of. (This was four days prior to its development).

On the Wednesday following, the farmer noticed a discharge issuing from the nostrils of the horse, and being a sensible man he isolated the animal and sent word to the owner that his horse had a cold. The owner sent me word to go and see the horse again, which I did at once, and imagine my surprise when I found the horse suffering from a most beautiful case of acute glanders, presenting the following symptoms :

Discharge from both nostrils which looked like the white of an egg; there was an occasional epistaxis, which caused the discharge to become mixed with blood; upon examining the septum nasi a number of tubercles of various sizes and presenting a dirty oily appearance, could be seen. The sub-maxillary lymphatic glands were high up in the inter-maxillary space and were firm and lobulated; three farcy buds were present and these on the posterior limbs. It is needless for me to say that I did not attempt to treat this, the third disease the horse had had during a period of six weeks.

As a means of precaution against the spreading of the disease among the other animals, I had the animal removed to a wood near by without crossing any highway, and where no animals are allowed to run. I then examined the other horses on the farm, I think some sixty (60) in number, and found none affected, and so far as I have learned not a single horse has since developed the disease.

I then reported the disease to the Bureau of Animal Industry, and one of its officers went out and examined the horse, and I am pleased to say he confirmed my diagnosis of acute glanders. He condemned the animal and forbid his removal under any circumstances until the State veterinarian could appraise and destroy him. This gentleman, however, did not see him, as he died in a few days and was buried, and I, therefore, did not have the opportunity of making a post mortem examination.

Now, gentlemen, if my subject has not become monotonous, I would like to ask a few questions, but before doing so, I will say that this horse was not known to have come in contact with any animal diseased with glanders.

The questions are:

1. Was the glanders here a sequella of the previous trouble? I have never heard of its being.
2. Was it of spontaneous origin?
3. Was the pneumonia caused by the formation of the tubercles which we invariably find in the lungs of a glandered horse.
4. Was the germ in the system and did the debility produced by the previous illness act as an exciting cause, and cause the development of the glanders? This latter I think very plausible, as an explanation for the sudden development of the disease.

However, I hope you will all give your opinion as to the cause of the development of the glanders in this particular case. Let us hear from you, gentlemen, if not to-night at some future meeting of our society.

BOVINE TUBERCULOSIS.

A Paper read at a Meeting of the New Jersey State Veterinary Society,
by E. L. LOBLEIN, D.V.S.

Gentlemen:

For the entertainment and I hope benefit of the society, I have undertaken to write on a subject that I am illy able to cope with, but as I consider the study of tuberculosis of paramount importance to the veterinarian, I thought we might air our opinions and experience with benefit to all. My reasons for considering it so important are these: First and chiefly. Much of the milk and meat from such diseased cattle are consumed for food daily, and although not in a position to say positively that the flesh and milk from tuberculous cattle is dangerous to use, yet I think many cases of tuberculosis in human beings could be attributed to consumption of such food. Especially do I think this possible in little chil-

dren being fed the milk from a cow suffering from this disease. Here I will remark that Jersey cows are more subject to tubercle than other and commoner breeds of cattle, and how well we all know that in the suburbs of large cities and in small cities we find one cow kept to supply milk for the children of a family and this one cow in nine cases out of ten is a Jersey cow. Many medical practitioners have often told that they meet with true cases of tuberculosis in children where the most careful research failed to show that there had been any tuberculosis in that family for generations back, consequently there could be no hereditary taint. Could not many of these cases be caused by the milk of tubercular cattle? My experience is that in the majority of cattle suffering from this disease we find tubercles in the udder in various stages of degeneration and sometimes leading directly into the milk ducts. I call to memory one case of a cow that was used to feed calves, as she had been coughing some time and the owner, being a very scrupulous man about healthy food, would not use the milk for human consumption. Two heifers, five and six months old, both calves from healthy cows, who had been fed from this cow sickened and died with tubercular dysentery; and after I found out their history I made a careful examination of the cow and pronounced her a case of tuberculosis. I watched this cow closely and about six months after, as she was nearly dead, the owner consented to kill her and allow me to make a post mortem, which revealed a beautiful case of tuberculosis with a tubercle in the udder in a state of cheesy degeneration. I felt positive then that those calves had contracted the disease from the milk of that cow. For the same reason I contend that the milk could produce the same disease in children, and whenever I have reason to believe a cow is suffering from this disease I advise the owner, in the strongest terms possible, not to use the milk from said animal in his family. True, such advice will often bring adverse criticism down on us through ignorance, but such is often the case where one is doing what he considers his duty, and as we should be sanitarians in the strictest sense of the word, we should never miss an opportunity where contagious diseases

of cattle or any animals are menacing to human health, to show that we are such, and as such the public will be compelled to respect our calling.

Now arises a question. If the flesh of such animals is unfit for food, how absolutely necessary becomes the inspection of all meat; not the sort of inspection I have heard advocated by some, for the inspector simply to go around to each butcher shop and pronounce the meat good or bad, but that every animal should be inspected when slaughtered. Of course I do not want to impress any one with the belief that I entertain an opinion that those cases where an animal in otherwise good condition has a tubercle or cyst in some part of the body or organs, is unfit for food, but there are many cattle slaughtered in an advanced stage of tuberculosis and find their way to the sausage makers. This I say from personal knowledge, as I know of a number of instances where I have advised the owner to destroy a cow and get her out of the way, and in a few days she has been taken to the butcher's. Just here we might speak of the great number of two, three and four-day-old calves, known as bob veal, that are consumed all the time and are the direct cause of many cases of cholera morbus, particularly during the summer season—but my enthusiasm over the inspection of meat is taking me from my subject.

In regard to the propagation of tuberculosis there are many and various opinions set forth in our text books, in studying over the different ways of propagation of this disease. We also believe in its hereditary predisposition. We also believe in its contagiousness, and still I believe that from chronic bronchitis genuine tuberculosis may be developed, but I believe the disease could be lessened by more judicious breeding of cattle, and the farmer or stock-raiser should be advised never to breed a cow that is not in apparently perfect health, as this is the only way to advise him, for if he waited until he recognized the disease, the trouble could not be averted in this way. I can tell one instance where the disease has been developed in three generations in a very few years, showing how the disease could be increased in that way, and cows suffering from tuberculosis have a great tendency to breed, and

I believe the same is the case with all animals suffering with this disease. Locality seems to exert a strong influence in the rapid development of tuberculosis; low and damp land seeming to increase the disease very rapidly. The same may be said of all lung diseases. I will narrate a case which to me was very interesting: While inspecting cattle under the employ of the Government, I was called to examine some cattle on a farm where there had previously been contagious pleuropneumonia; one year previous, on examination, found one cow quite sick, but could not make a differential diagnosis between pleuro-pneumonia and tuberculosis. Left to call again in a few days, thinking that I could tell more positively by that time. The next week I was surprised to find this animal much better, but another cow was then pining away very rapidly and coughing a great deal; on examination I diagnosed this a case of tuberculosis, but not feeling positive, I requested the chief inspector to visit this herd and we made a post mortem on one of these cows, the second one taken with the disease, and found the most perfectly developed case of tuberculosis it has ever been my good luck to see, the pleura and anterior face of the diaphragm being completely covered with miliary tubercles and the lungs in the same condition. These cases occurred in the fall of '88, and before the spring of '89 thirteen out of a herd of eighteen had succumbed to tuberculosis, where all had been healthy with the exception of two first mentioned that were taken sick in the fall. The pasture and stables in which these cattle were kept were on low, marshy land. This is an evidence of the rapid progress the disease can make in a herd under such favorable circumstances.

Gentlemen, you will observe that I have not entered into the minute physiological study of the disease, as I thought that would exhaust too much time without bringing forth the argument that would be of the most practical benefit to us. With regard to treatment, I never would advise any in cattle, as, to say the least, it would give unsatisfactory results and be a useless expense.

THE CONTROL OF SEX IN BREEDING.*

By J. P. KLENCH, V.S.

I read with pleasure the interesting and also curious article of the *North British Agriculturist* published in your edition of May 11th, and fully agree with the author when he says that the most of the theories propounded on the subject are ridiculous in the highest degree. I will even say that they all, without exception, are very absurd and can pass off easier for stable yarns than for serious theories.

It must be admitted that if there is a law governing the sex in breeding, it must equally apply to all species of animals, and even to those of the lowest class.

Physiologists have admitted many years ago, that there was no law controlling the sex in the offspring, but proved that the sex depends solely upon the actual preponderance of either male or female at the time of copulation; that the pre-eminence of one nature over another is established by health, age, vigor, energy of constitution and natural development. Any male with such advantage, will always reproduce not only his sex, but also his strength, speed, endurance, form and temper; which fact is well known to all breeders of fast horses throughout the United States.

The real mystery of the generative act has never been fully discovered in spite of the most thorough observation of the physiologists. It is well known that fecundation, in all species of animals, is accomplished by the intimate union of the male spermatozoa to the germ of the female; but it was so far entirely impossible to find out how their union is established, in fact how these animalcules copulate. Science could not go further and the final act of fecundation is still a mystery.

This article recalls to my memory a similar discussion which took place in the Academie des Sciences of Paris, France, about thirty years ago, when an old, venerable gen-

*From the Breeder and Sportsman.

tleman earnestly advised his medical confreres to investigate the mysteries of nature upon themselves and their families, adding, however, that it was a very delicate matter for a man to expose in public the secrets of married life. But as he was advanced in years, he would not refrain from communicating his personal experience on that question. Imbued with the truth of the above physiological law, he expressed to his educated wife his desire to investigate this matter for the benefit of science, and succeeded in obtaining her consent. The result was as he wished—two sons and a daughter.

This same principle was taken up immediately by scientific agriculturists, and a few years later, in 1861 or 1862, I read in French agricultural papers, several reports of successful experiments made by an aristocratic breeder of fine cattle. Wishing to obtain a bull calf from a cow that was a great producer of rich, creamy milk, he tied a common bull with that cow for several days to keep her sexual organs permanently excited, and when he thought her nature sufficiently weakened he gave her the service of a strong, vigorous bull, and obtained a bull calf. For the following years he succeeded in raising, at will, heifers from the same cow, by putting her to the bull on the very first day she come in heat. Several other breeders confirmed the truth of this principle by proceeding in the same manner with horses as well as cattle and swine.

I have never since that time read any further details upon that question, but can draw from daily life sufficient evidence to prove the same facts.

Many instances are found where a man of old age and weak constitution marries a young, robust wife, and the family will count all daughters, or more daughters than sons. All sheep raisers know well that adult ewes in good health and condition will bring more ewe lambs than bucks, while a vigorous adult ram, turned out with a small number of young ewes or old, weak, sickly sheep, will produce more bucks than females.

I know of an old slut, covered by a young large St. Ber-

nard dog, that gave birth to six male pups, all resembling their sire in color and size.

In some years we hear that more fillies are born than horse colts, while in others their numbers are about even. A close investigation of the breeding books of our great establishments might give some very interesting information in regard to that matter. Mr. S. Heplar, of the Laymo Ranch near Santa Rosa, raised last year, from nine mares, six horse colts; while this year the same nine mares, bred to the same stallion, brought one horse colt to eight fillies, and he never could see any difference in the condition of his horse. Nature always has, and forever will, perform acts that cannot be explained by the most acute human intellect, and whenever the above physiological principle does not find application, all efforts to obtain further light about the mysterious ways of nature will be made in vain.

The article of the *North British Agriculturist* speaks very highly of the only reasonable theory so far, promulgated by a German and American physician, namely, that the right testis and the right ovary produce male sperm and male germ, while the organs of the left side produce the female sex, and that the seed of one side would not impregnate that of the other side. The experiments those gentlemen have made to test the accuracy of that theory have given them results that they declare are in accordance with that theory. In evidence they report the following case: There have been for several years among the horses of a Danish regiment, in spite of all endeavors, some pregnant steeds after the time of pasture. It was known that this had been the case several times at the same season, and the watch was particularly active, no strange horse having been admitted to the pasture grounds. At last they found that among the horses of the regiment there was an old stallion whose right testicle had been taken out, and all the foals generated by him were fillies." In all certainty that old horse was a ridgling whose left testicle was located in the abdomen, and consequently was not a potent breeder, and unable to cope in vigor and constitutional strength with healthy mares in full possession of complete

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sexual organs. These gentlemen were most certainly mistaken; besides, I can refute that theory by several reliable, existing facts. Dr. Sheares, of Santa Rosa, who has served as physician in the War of the Rebellion, knows of a soldier who lost the right testicle by a bullet shot to have raised five children, of which three are boys. I know in Santa Rosa a man of middle age and good, robust health, who lost his right testicle while a young man, married, and with but the left testicle glories in the possession of three children, all three boys. Almost any physician throughout the country could report some cases to refute this irrational theory. I can merely wonder how the world could exist thousands of years without making a good, practical use of this theory if it was true.

The owners of large cattle ranches, for instance, who wish to stop the too rapid increase of stock, instead of spaying the heifers in full, would only remove the left ovary from a certain number of cows, in order to obtain only bull calves that would, in time, make steers for the market.

It is besides a very difficult task, or rather an impossibility to support this lateral sex theory by arguments drawn from anatomy and physiology. One can hardly believe that nature, which intended to facilitate the reproduction of every species of animals it has created, would interpose such difficulties to their natural increase, by subjecting the same to a mere hazard. And indeed, the sperm of the male must be carried to either one of the two horns of the womb, left or right, in order to meet the germ coming from the ovary. But suppose that the sperm of the right testis would come in contact with the ovum of the left ovary, there would not be pregnancy according to that theory, and the purposes of nature would be foiled, which is unnatural. The left horn would necessarily be destined to develop only a female foetus, and the right horn the male foetus; but practice shows that bull calves are found in the left horn of the cow's womb, and filly colts in the right horn of the mare's womb. Nor has anybody ever observed that in mulipares like the swine and canine species, the foetuses were separated in the womb

according to sex? The two sexes are always indifferently developed in the same horn of the womb, where fecundation took place. We need only to mention that sows, bitches, cats, goats and sheep will give birth to several young ones, from two to ten and twelve, of various sexes, to demonstrate that there cannot be the least foundation in that lateral sex theory. Even the twins of our human species will bring testimony against its rationality.

It must be again admitted that this theory, if true, would find application to all animals. But in fowls, birds, etc., there is only one ovary and that is the left one, the right ovary becoming atrophied at an early age in nearly all species of fowls. This left ovary constitutes a large organ of the form of a grape, composed of many ovaries in different periods of development, the young ones being small and whitish, while the old ones are large and yellow and constitute the yellow part of the egg which is completed as it progresses towards the cloacum. Then the left ovary in fowls produces our fighting cocks and crowing roosters as a daily evidence against this lateral sex theory.

Another instance is found in the rabbit, where the body of the womb is absent, and the two horns open in the vagina. It would be ridiculous to suppose that Mr. Jackrabbit knows how and when to draw on the right testicle and deposit the seed in the right horn so as not to commit *error naturæ* to the disadvantage of the rabbit species. But the disastrous increase of rabbits in the Fresno and Kern countries is a *prima facie* evidence that the jackrabbit is not guilty of any mistakes of that nature.

The mode of fecundation of fish spawn would be another instance against that theory, for in this case the fecundation is accomplished without the concours of either male or female. For the spawn is floating in the water and there impregnated at hazard by the floating sperm of the male fish. The impregnation is mere accident.

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REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."—VETERINARY RECORD.

AMERICAN VETERINARY COLLEGE—HOSPITAL DEP'T.
INVERSION OF THE BLADDER.

BY W. G. COATES, M.D., D.V.S., Assistant Veterinary Surgeon.

The following case came under my observation, and is of interest because of its rareness.

I have sought veterinary literature relative to inversion of the bladder, and find it a very rare affection, occasionally taking place previous to parturition or after delivery, but have failed to discover any article on the subject where it has not been a complication in the parturient state.

On August 14, 1889, a black mare, nine years of age, medium height, in good bodily condition and used for hacking purposes, was admitted to the Hospital Department of the American Veterinary College with the following history: had been in possession of present owner three years, always in apparent good health and never noticed anything abnormal except an occasional desire to micturate large quantities of urine of a pale color. Early in the morning of the day in question, the owner on entering the stable, noticed the mare elevating and switching her tail and making attempts to urinate. Not paying particular attention to this, gave her a feed of oats and returned again at noon to find her acting uneasily, as if with colicky pains. On the floor behind her was a little urine streaked with blood, which alarmed him considerably, and he sent for a veterinarian in the vicinity, who came immediately and discovered a reddish looking mass protruding from the vulva, which he thought was a prolapsus of the uterus. After making several unsuccessful attempts to reduce the tumor, and knowing it a serious and troublesome case, advised the owner to send the animal to the hospital, where the facilities were much better for treating a case in her condition than in the owner's stable.

On admission, the body was partially covered with sweat, slight colicky pains, pawing occasionally and making frequent attempts to lie down, elevating and switching the tail, frequent and violent straining, with legs widely stretched apart, arching of back and using extraordinary efforts of the abdominal muscles in trying to get rid of some foreign body from the vagina, anxious countenance, pulse accelerated and respiration jerky in character. At each effort of tenesmus, the vulva would dilate and a bright rose colored looking tumor of globular shape would protrude from the vulva, and at the same time a few masses of feces were expelled from the rectum with a considerable amount of flatus. Thinking it a case of prolapsus of the uterus, and having her properly secured in the standing position, made a vaginal examination, and to my surprise found a complete inversion of the bladder, which was easily reduced on account of an excessive dilatation of the meatus urinarius, which was about two inches in diameter, soft and flabby to the touch. The mass was no sooner reduced than it was expelled again, from the constant and violent muscular action; five or six times it was replaced and as fast returned again. At last I determined to hold it in place with my hand in the interior of the bladder, acting as a pessary, but the efforts on the part of the mare to evert the bladder and resist my hand by her persistent straining, were so violent that a metallic female catheter was introduced into the bladder and held in position by Dr. Hühne, one of the staff of the hospital, and a solution of one ounce each of tincture of opium and belladonna was poured into the bladder through the catheter. In about five minutes the tenesmus lessened, but on withdrawing the hand, the whole contents of the bladder was violently expelled, mixed with a small amount of blood, and the bladder itself partially inverted. The same method of reduction was employed again and the same amount of opium and belladonna introduced, which resulted in reducing the irritation. In the meantime ten drachms of chloral hydrate in pill form was given, which had its effects in twenty minutes, and all efforts at expulsion ceased.

I was about preparing some sort of a pessary to strap in

place, but seeing the chloral have such control over the voluntary efforts of the animal to persistently strain, I thought it better to leave well enough alone and administered eight drachms of chloral, and in half an hour she was in a profound sleep lasting four hours, and remained drowsy as long more. After the effects of the chloral passed away, there was a tendency to tenesmus and she was given an injection of opium and belladonna as before.

The following morning she was apparently quiet, with an occasional elevation of the tail and passing a considerable amount of flatus from the rectum and expelling small quantities of urine. She was now placed under local anodyne as required, fed on soft food, and on August 22d discharged apparently all right, the meatus urinarius having contracted to about half an inch in diameter. The bladder was considerably hardened and indurated, and the mucous membrane had a sort of a nodular feel, but being afraid that the same occurrence might take place again I deferred making a further examination.

JABOT—OBSTRUCTION OF THE ŒSOPHAGUS—OPERATION.

By R. R. MORRISON, D.V.S., House Surgeon.

This animal was a sorrel gelding, six years of age, recently purchased, with a guarantee of soundness at the time of purchase. Five days after his examination he was fed with carrots, which he ate greedily, and the next morning was found coughing up large quantities of saliva. He then presented an enlargement about as large as one's hand, situated at the lower part of the neck, on the left side. The tumor was soft and puffy, somewhat movable, and when manipulated caused the animal to have spasms of the neck, followed by copious discharges of saliva and coughing. At that time the temperature was 102°; pulse 54 and somewhat weak; respiration 36, with a slight sweating on the left side of the head and neck, the right side being quite cold. The diagnosis was made of a jabot, caused by a piece of carrot lodged in the œsophagus, and causing the obstruction by its dilatation. Simple means,

such as the administration of oil and glycerine, proved of no benefit, and the owner was notified of the critical condition of the patient and of the necessity for surgical interference, viz., the opening of the œsophagus, to displace the foreign body, which was lodged in the thoracic portion of that organ, and of the division and stitching of that organ for that purpose.

Having obtained his consent to the operation, two drachms of solution of cocaine, ten per cent., were injected around the enlargement. The animal standing up, an incision was made through the cut, and continued down to the œsophagus. The blood vessels, carotid and œsophagus being isolated and carefully pushed aside, the œsophagus itself was separated from the surrounding cellular tissue, and a piece of tape put under it, allowing it to be gently raised from the depth of the wound and its coats carefully incised. At that moment the sac was emptied of its contents, consisting of masticated food and saliva, and then a probang inserted into the canal. Some eighteen inches in the thorax, from the cervical incision, the instrument came in contact with the foreign body, which to be dislodged and pushed in the stomach required a certain amount of force. A small portion of the edges of the œsophageal incision was removed, and the coats of the organs brought together with fine closed sutures of carbolized silk. The outside edges of the incision were held together with a pin suture, the wound dressed antiseptically as well as possible, and the animal put on liquid nourishing diet.

The following day the temperature of the patient was $102\frac{1}{2}^{\circ}$, pulse 60, respiration 24. He had drank a pail of alcoholized water, the wound looked well and was dressed as before. On the third day the temperature rose to $105\frac{1}{2}^{\circ}$, the pulse remaining at 60, weak, but regular, and the respiration accelerated to 40. It was feared that the stitches had not closed the wound very closely, as a portion of the liquid he had taken seemed to escape. Nutritive enemata were given during the day, and the wound dressed as usual. On the fourth day the thermometer registered 105° , the pulse had gone up to 80, respiration 40. The expression was anxious

and the body covered with sweat in places. The wound was very offensive, and some portions of cellular tissue were sloughing away, though granulations of a healthy nature were found at the bottom of the wound. A diet of milk and eggs was ordered and drank by the patient, but very little escaping through the wound. On the sixth day the temperature was 106° , pulse 120, respiration 54. The extremities were cold and there was profuse sweating, with a watery, offensive discharge from the bowels, and shortly the animal laid down and died, without a struggle.

At the post mortem the lungs and heart were found in a healthy condition. The stomach contained a small quantity of fluid and a few grains of undigested oats, and the intestines a small quantity of watery matter. On removing the œsophagus, only one of the stitches was found to have held. The edges of both the muscular and mucous coats were gangrenous, and a number of small abscesses were found around the seat of the operation, extending into the thoracic cavity. The mucous membrane of the œsophagus, a short distance from the diaphragm, was ulcerated in several places, at the place where the foreign body had been stopped and pushed off by the probang.

SURGICAL PATHOLOGY.

NOTES ON THE PRESENCE OF THE RABID VIRUS IN NERVES.

By E. Roux.

The author, continuing his experiments on the effects of the inoculation of the various nerves of animals that have died from rabies, without giving final conclusions, records the following facts: Two rabbits, inoculated with the produce of the crushing in water of nerves of the right and left axilla of a subject bitten on the left thumb, died, one, the thirty-fifth, the other on the thirty-sixth day after inoculation. A third rabbit, inoculated with the bulb, died in fifteen days; a fourth rabbit, inoculated with the left radial nerve, was well ten months after the inoculation. These experiments seem to prove that the propagation of the rabid virus took place from

the center to the periphery. Four other rabbits inoculated, two with the nerves of the left, and two with those of the right axilla of a subject bitten on the right hand, survived the inoculation. A rabbit inoculated with the cubital nerve from a subject bitten on the right hand, became rabid in fifty days. Another, inoculated with the right median nerve, became sick in nineteen days. Two rabbits, inoculated with the left median and cubital nerves, survived more than ten months; and another, inoculated with the bulb, became rabid in fourteen days. In a fourth case the results were analogous, except that the inoculation of a rabbit with the radial nerve of the bitten side was ineffective. In this same experiment, a rabbit inoculated with the nervous mass of the axilla of the bitten side became rabid after three and half months; in this case the propagation seemed to have taken place along the cubital nerve from the periphery to the centre.

Mr. Roux insists upon the period of ill feeling preceding the exhibition of confirmed rabies; during this latent period treatment has no more effects, yet a woman already treated at the Pasteur Institute, having been taken with lancinating pains in the bitten parts, was submitted to another treatment, and has remained well for two years past.—*Annales de Pasteur*.

CONTRIBUTION TO THE THEORY OF SUPPURATION.

BY A. GRAWITZ.

Grawitz injected under the skin of dogs, with all aseptic precautions, spirit of turpentine, in order to produce the formation of abscesses. After two days the animals were destroyed, and the pus, as well as pieces of the tissues, were placed on plates of gelatine. Fifteen days later there were no indications of microbes. The scraping of the plates, mixed with distilled water and injected in dogs, gave rise to no swelling or inflammation. Suppuration produced by the injection of spirit of turpentine is consequently free from all micro-organisms.

In a second series of experiments, Grawitz mixed with pus free from all germs, and taken from a dog, a given pro-

portion of staphylococcus pyogenes aurens; these last organisms stopped their growth. The blood clot of dog is also an improper medium for their development. This fact is noticeable, viz., that the pus corpuscles of this nature are dead elements, unable by their special activity to incorporate and destroy the microbes. Grawitz had the same result with pus from a psoas abscess, entirely free from germs.

The histologic examination of the walls of the abscess, produced by the spirit of turpentine, showed that the conjunctive cells were in the form of karyokinesis, and passing through the various parts of the process of inflammation. Grawitz saw that the cellular products of the conjunctive cells in proliferation cooperated with the leucocytes in the formation of pus. Suppuration is then not produced by micro-organisms only, neither do leucocytes alone cooperate alone in the production of purulent collections.—*Rev. des Sc. Med.*

IMMUNITY OF RABBITS AGAINST THE BACILLUS OF ROUGET OF SWINE.

By E. METSCHINKOFF.

If, in a rabbit inoculated against rouget, a virulent liquid is injected in the sub-cutaneous cellular tissue, living bacilli are found at the point of injection for a time, of various lengths, a proof that these bacilli are not destroyed by a chemical substance acting very rapidly as an antiseptic, as said by Emmerich, and Mattei; after the injection of vaccine made in the anterior chamber of the eye, living bacilli are found for a certain time; then the aqueous humor gives no more culture, and before this complete destruction of bacilli, the bacilli of the vaccine are seen mixed up with leucocytes immigrated in the anterior chamber.

In introducing under the skin of the rabbit plates of glass glued together with wax and dipped in a culture of virulent bacilli, leucocytes are seen penetrating between the plates, and in their interior a more or less considerable number of bacilli were detected in now-refractory rabbits. Bacilli enveloped by phagocytes remain for a long time entirely normal and coloring perfectly, while in refractory rabbits these

bacilli become altered after a certain time, and color very badly.

Immunity against the rouget of swine is then a new proof in favor of the theory of phagocytes and not an evidence against it.—*Annales de Pasteur*.

EXTRACTS FROM FOREIGN JOURNALS.

TWO CASES OF CONGENITAL TUBERCULOSIS IN CALVES.

By MESS. MALVOZ AND BROUVOIER.

The well known case of Johne, of congenital tuberculosis, finds a second instance in the record of cases reported by the author in the *Annales de Pasteur*.

CASE 1.—On the 25th of January they received from M. Lefevre, a veterinarian, the liver and lungs, with the lymphatic glands of an *eight months fetus* found in the uterus of a cow that was affected with general tuberculosis. On the liver, near the portal fissure, were some diseased lymphatic glands. In the hepatic substance there were a few granulations, well defined, of a grayish-white color. At the hilus of the lungs, near the bifurcation of the trachea, were a few diseased lymphatic glands also. The microscopic examination proved them to be of a true tuberculous nature, Koch's bacilli being found in the giant cells, and in the texture of the granulation of the diseased structure.

In the second case, the lesions were found in a calf six weeks old. They existed on the liver, and in its substance. The lymphatics were all hypertrophied, at the hilus of the lungs were also found packets of lymphatic glands, also diseased. Giant cells were numerous in these tubercular lesions and Koch's bacilli were found both in the hepatic nodules and the lymphatic glands.—*Annales de Pasteur*.

ETIOLOGY AND THERAPEUTICS OF SPRINGHALT.

By G. SANTINI.

Passing over a review of the various theories of Lissona, Abilgaard, Villate, Hertwig, &c., he specially considers that of

Renner, who had found at the post mortem as lesions of animals affected with springhalt, chronic inflammation of the great sciatic nerve. Then, reviewing the various treatments recommended, based upon pathological principles, such as the sections of the ilio-aponeurotic muscle of Hertwig, the tenotomy of the lateral extensor of the phalanges, (Boccar) the section of the internal patellar ligament, (Bassi) that of the aponeurosis of the shank, (Dieckerhoff) and then considering that of Renner which—based on the idea of spasmodic contraction of the posterior crural muscles—recommends the use of belladonna, aconite, stramonium &c., Dr. G. Santini considers the treatment recommended by Vachetta, viz.; the accupuncture in the region of the bicepo-femoris and semitendinous. This treatment was followed by recovery in two cases. In one, the springhalt existed in both legs, and a radical recovery was obtained by one application in one leg, and a considerable improvement in the other. In the second case, where myotomy and tenotomy had given no results, recovery followed two applications of accupuncture.—*Clinica Veterinaria*.

TREATMENT OF ROARING.

By DR. A. RUSSI.

The author claims to have obtained the recovery of a case of roaring in a horse by the tracheal injection of a solution of sulphate of strychnia. After trying blisters over the laryngeal region, and electricity, without results, he administered the strychnia in five centigram doses, in five grams of distilled water. For six days he observed a well marked progressive improvement. *Ninety* days after this treatment the roaring was scarcely perceptible after a trot and a gallop of two hours. Complete recovery followed. The dose of sulphate of strychnia had been raised as high as thirty centigrams.—*Giornale di Vet. Militare*.

CHLORHYDRATE OF COCAINE IN NEUROTOMY.

By A. DEJONG.

To avoid the necessity of casting the patient, the author has tried use of this remedy in several cases, operating on the

front and hind leg in the standing position. He operates as follows: After shaving the region, he applies a bandage of Esmarck, places the horse in stocks, and puts a twitch on the nose. If he operates on the front leg, he has it carried forward; if he operates on the hind leg, he secures it in the usual way. Then carefully washing the skin with an antiseptic lotion, and selecting the place where the incision is to be made, he first injects in three different places about two grammes of a ten per cent. solution of cocaine. In from half a minute to a minute the incision of the skin is made, and the nerve dissected, secured and excised. It is prudent to drop a little of the solution on the nerve before excision. An antiseptic dressing is carefully applied.—*Siidschrift voor Verarts su Veetselt*.

PASSAGE OF MICROBES THROUGH THE SKIN AND THE MUCOUS MEMBRANES.

From experiments made by Van Roth, under the direction of Koch, it results that the buccal mucous membrane is impenetrable for the bacterias. The simple application of pathogenic organisms upon the nasal mucous membrane of rabbits has, on the contrary, always given rise to local or general infection.

A mixture of bacterias in olive oil or in lanoline, applied by friction on the skin, has caused two deaths from anthrax out of three thus treated: the same virus without the grease has killed four out of five animals. The same application made with a paint brush has given negative results in seven cases. The author has demonstrated from his experiments and his microscopic sections that friction, while leaving the epidermis intact, allows nevertheless the introduction of the anthrax bacillus. He considers as possible the passage of microbes through the skin, even when there is no solution of continuity of the tegument.—*Beol. Thierarzt. Woch.*

LONG INCUBATION OF RABIES.

A paper of Odessa reports that a person bitten by a rabid wolf and submitted to preventive inoculation by the Pasteur method, became affected after nineteen months, and died from hydrophobia.—*Ibid.*

CONTRIBUTION TO THE STUDY OF THE CÆNURUS CEREBRALIS.

According to some authors, the almost exclusive seat of the *tænia cænurus* is the brain and the spinal cord, and the presence of this parasite in other organs is exceptional. Professor Rabe, of Hanover, reports several observations, among them one showing that this fact is not as uncommon as it is generally believed to be.

He mentions one case of Zurn, who found a *cænurus* under the skin of a sheep, and one of Nathusius, who found it under that of a calf. Similar facts are not rare in the hare and the rabbit, or even in wild ruminants. Mr. Rabe has found the vesicles of this *tænia* in the nervous centers, but also in the lymphatic glands of the thorax and of the abdomen, in the thyroid gland, and in the muscles of an antelope. In his view lymphatic glands and muscles would come next to the nervous center, among the organs where the *cænurus* is found.—*Ibid.*

MELANO-SARCOMA IN THE CARDIAC MUSCLES.

Mr. Koch has observed in a white horse melanotic tumors developed in the muscles of the heart. The largest, which had the dimensions of a large chicken's egg, was protruding on the external face of the left ventricle. Another, the size of a large nut, was located in the interventricular septum, and formed a projection running towards the cavity of the left ventricle. Under the endocardium of the right heart, and on the septum also, near the valvular *cordæ-tendinosæ* of the auriculo-ventricular openings, were a number of smaller deposits, varying in size from that of a grain of rice to that of an hazel nut. There was no cardiac disturbance during the life of the animal.—*Ibid.*

CONTRIBUTION TO THE STUDY OF REPEATED COLICS IN THE HORSE.

Repeated colics do not belong to a unique and well determined morbid entity more than any other colics. They may arise from an intestinal stenosis, the pressure of a calculus, or peritoneal adhesions between the abdominal viscera. Mr.

Eckardt, of Berlin, reports a case relating to this kind of colic. It was in a stable horse which for five months had frequent attacks of abdominal pain. The colics were light; the animal pawed, laid down carefully, and remained in that position stretched on his side. Often he would seat himself on his haunches. The abdomen was tympanitic and painful to pressure. The temperature always rose, though the pulse and respiration were not altered. There was no appetite or thirst. The feces were small or not present. The treatment was in every instance the same—eserine under the skin, a ball of aloes and bi-carbonate of soda with rhubarb and sulphate of soda. After a copious discharge, and a diet of twenty-four hours, the animal would recover, but only to be taken again the next day, or several days after. Death at length occurred during an attack more acute than the others. At the autopsy the stomach was found to be lacerated and the small intestine was united to the meso-colon by a strong band, and at this point the canal of the duodenum was considerably contracted, while in front of this it was dilated and hypertrophied.—*Ibid.*

SULPHATE OF ESERINE IN PARTURIENT APOPLEXY.

M. Schmidt, of Crossen, has obtained three rapid recoveries by the subcutaneous injection of 15 to 20 centigrammes of eserine. In one case, where the purgative effect had not been sufficient from the first injection, the medication was renewed on the following day.—*Ibid.*

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VETERINARY MEDICINES; THEIR ACTION AND USES. By Finlay Dunn, Formerly Lecturer on Materia Medica at the Edinburgh Veterinary College, and Examiner in Chemistry in the Royal College of Veterinary Surgeons. Seventh Edition, Revised and Enlarged. Edinburgh: David Douglas, 1889.

The great progress made in veterinary pharmacology and therapy, since Dun last revised his text-book, has made all who relied upon veterinary sources for their guidance in the

study of medicines feel most sorely the need of a more modern work than the sole representative from the ranks of veterinary science, which had outlived its usefulness and was more of an ornament upon the shelf than the constant companion of the student. No branch of veterinary science has made greater strides within the last decade than has the study of drugs. New alkaloids have been discovered and applied to the treatment of disease, and to many are deemed of indispensable utility; observations and experiments have raised some of them very nearly, if not quite, to the dignity of specifics in their power over certain morbid states of the system. The length of time once required to establish catharsis in the horse was from twenty-four to thirty-six or forty-eight hours; discoveries and experiments have reduced this often fatal delay down to twenty minutes in some cases. The hobbles have been laid aside to give place to the new alkaloid of exythexylon coca, and many other steps forward have been taken and many are in process of development. If none others were brought out than the two mentioned, they would be amply sufficient to stamp the past decade as the most glorious in the history of materia medica. And yet the veterinary student had no text book recording anything much later than Harvey's discovery of the circulation of the blood. Such a state of affairs was discouraging to students in their study of this department; if their lecturer was only the least bit progressive he was so far in advance of his text-book that the latter became simply a member of the library whose occupation had gone.

For the present work the profession owes no little debt to its author, for the book not only steps abreast of the times in the matter of its contents, but its arrangement and typography shows life and spirit, and when placed in comparison with its parent edition it emphasizes how truly brave, and studious, and patient were the men who gained their education from its pages. The present edition has been almost entirely rewritten, rearranged and rehabilitated. The matter relating to the preparation and properties of medicine—which was once so voluminous that it absorbed the functions of the

Dispensatory—has been condensed; while the description of their actions on the several domesticated animals, and their therapeutical employment has received fuller and more systematic consideration. The author has introduced into this work a new classification which in many respects is a great improvement over anything previously attempted. Classification according to action has always been confounding, as many medicines have a variety of actions, and the same drug has to be placed sometimes in half a dozen groups, as, for example, alcohol is stimulant, irritant, narcotic, sedative, and anæsthetic. Dun adopts here the same classification used by Dr. Lauder Brunton, in his recent work, and it is at once quickly understood and to the student will greatly facilitate the study of individual drugs.

His "Index to Diseases and Remedies," which in former works was a mere list of drugs usually prescribed in particular disorders, has been greatly enhanced in value by a synopsis of the condition which seems to indicate the employment of any certain medicine, together with the gross pathology of the disease, and the manner in which the drug is supposed to cure it.

An appendix is added to the work containing the unpublished notes of experiments, by Fred Smith and Charles Rutherford, of Aldershot, with aconitine, aloine and atropine. Their previous alkaloid experiments—reviewed in these pages over a year ago—are detailed in the body of the book.

In every department the book shows signs of infused life, having felt the need of it for so long a time no veterinarian should allow his library to contain only the old edition.

CORRESPONDENCE.

ARMY VETERINARY LEGISLATION.

Editor American Veterinary Review:

DEAR SIR.—The above subject having appeared under various aspects, I venture to express the views of some of the present army incumbents on the matter.

There are three (3) bills at present before the profession, viz., The New Jersey Veterinary Medical Association's, Dr. Lemay's (Seventh Cavalry,) and Prof. Huidokoper's. The two former secure the present incumbents, the lowest proposed grade without examination, and higher grades by examination, but Dr. Huidokoper's (if I am correctly informed), completely ignores them.

Now there are veterinarians in the army of long service so long in some cases, that were they combatants, they would be entitled to retire, with three-fourths their pay and allowances, and in fact some of them would be retired at once, under those conditions, by reason of ill-health, the results of hardships incidental to frontier service. These men have from five to twenty-five years faithful service, performing their duty to the Government to the best of their ability; one of them to my personal knowledge, by his writings on army veterinary subjects in various military journals, for the past six years has done incalculable service for the profession, has raised it, bad as it is, more or less from the deep slough it was in for years. These writings have caused many useful modifications to have been made in the feeding, shoeing and purchasing of public animals. He was the first army veterinarian recognized as a professional expert before a board of officers, and the introducer of the first veterinary bill, *from which all the present ones have been copied, with some slight modifications*, and he is at this moment a pecuniary loser to the extent of nearly five hundred dollars, by his personal efforts for its introduction into Congress. It certainly seems a hard and cruel case to kick those men into the world to starve or die, after their faithful and long services, several of them suffering from debility, and always the results of accidents and hardships incidental to the service on the frontier. Now, I think it will be very difficult to find a precedent for this proposed selfish action, in all the recent efforts at army reforms (and they are many).

When the new Hospital Corps was established last year, there were a great many old and useless stewards in the service. Were these men kicked out to starve? No; they

are retained until their time arrives for retirement and pension. Were the old contract doctors kicked out to starve, *although many of them are non-graduates*? No; there are two bills before Congress at present for giving them direct commissions.

Were the officers who were disabled at the termination of the late Civil War kicked out to starve? No; they were either retained, *crippled and useless* (as they were in great numbers) or compensated by pension, or lump sum of money down.

There are now about fifty officers awaiting vacancies, on the limited retired list for pensions. *Official boards have declared those men as being unfit for service.* Why are they not kicked out to starve? If a soldier of any service, be he commissioned or enlisted, gets disabled, he is provided with a comfortable home, or pensioned, and frequently both. *He is not kicked out to starve.* In your last issue, you say "it's a dirty bird that fouls it's own nest." Don't you think this homely and truthful proverb is specially applicable to this proposed selfish action of ignoring the present army incumbents? By all means do as is usually done in parallel cases; give us the lowest grade without examination, (there are but a few of us) and our chances of higher grades by examination, if we so choose, but if we "do stink in the nostrils" of our embryonic "principal army veterinarian and Major of Cavalry," then add a clause for our retirement and pension. Many of us are graduates of long standing, and hail from alma maters second to none. But it does not seem consistent with fair play and gentlemanlike action to ask us to step into an examination room, and compete against a young graduate, stuffed as full as a "Strasburg goose" with theory. If I would ask any officer of five or ten years standing, to compete on West Point subjects with a recent graduate of that well-known institution, I can anticipate his reply. I took advantage of a visit of our Member of Congress to his home for the recent holidays, to sound him on the subject, and his reply was characteristic of an old soldier and a gentleman, and it was as follows: "I will take good care that no bill shall

pass which will injure any army veterinarian." I may add that this gentleman is a prominent member on the Committee on Military Affairs. Whilst I am willing to make any reasonable sacrifice for the elevation of the profession, say of one or more month's pay, under the new regime, it is altogether another affair to snatch the bread directly out of my mouth. Our stipend is so small that it is impossible for any of us to live decently on it, therefore, the proverbial "rainy day" is unprovided for. "Self-preservation is the first law of nature," and "a worm will turn on the foot which crushes it." I know one or more army worms, who have friends in Washington, who will not fail to turn when any bill presents itself to their detriment or injury, and I question the policy of presenting any bill of the form now under discussion. It is all very well to theorize, but I certainly am candid enough to state my preference for my present position, (bad as some people think it) to that of commencing private practice without sufficient means to pay my railroad fare to the scene of my proposed private endeavors. I am forcibly reminded of the old rhyme:

God bless me and my wife,
My son John, and his wife,
Us four and no more.

That highly interesting process known popularly as "feathering one's own nest" is perfectly legitimate, laudable and human, provided the "down" is not obtained by stripping the feathers from other fowl who are unfortunate enough to be placed in a poor position for self-defense.

There is such a thing recognized as vested rights, and for which there is no greater advocate than our own War Department, (I have given some examples). An attempt at infringement of those, amongst even the North American Indians, is followed by the direst punishments. It is strange that there are civilized people whose selfishness will not allow them to get to the level of the untutored savage. Fortunately however, those gentlemen (save the mark) cannot be very dictatorial, as every bill has to pass two committees, and the poor fowl, whose feathers are thought necessary for

other and more downy nests, have voices, which will be listened to with as much respect and attention as the would-be "strippers."

If we must be examined, confine the examination to *practical subjects*, and let it be carried out previous to the examination of other candidates.

Dr. Griffin's letter in your last issue is highly instructive, gratifying and complimentary to him, no doubt. He is a young graduate and just appointed to the army, and I am sure anticipates with much ardor and pleasant feelings, "fleshing his maiden sword" in a competitive examination, but if he had from five to twenty years army service, and had made up his mind to die therein, his ideas would not savor so very highly of the romantic view of this question, particularly if a walking cane was necessary to assist his movements. A man suffering from old age, rheumatism, and kindred ailments, the results of exposure and field service, does not view those things in the some roseate hue as our young and enthusiastic friend, but probably a few years more would alter his ideas.

Army Surgeons are appointed First Lieutenants direct, to compensate them for their pecuniary outlay in getting a profession, whilst that of combatant officers is provided by government. Is not this equally applicable to veterinarians entering the army?

A MILITARY VETERINARIAN.

SPECIAL NOTICE.

"VETERINARIAN WANTED."

For particulars address, DR. J. W. SCHEIBLER, 310 Third St., Memphis, Tenn.

OBITUARY.

WILLIAM LOFT, JR.

Whereas, It has pleased Divine Providence to remove from our midst William Loft Jr., of Jersey City, New Jersey, an attentive and diligent student,

Resolved: That we the students of the American Veterinary College, keenly feel the loss of one of our sober and industrious classmates. And furthermore

Resolved: That we tender our sympathies to the family and friends of the deceased in this their great bereavement. And also

Resolved: That a copy of these resolutions be sent to the family of the deceased and published in the AMERICAN VETERINARY REVIEW and the students attend the funeral in a body.

A. F. BECKER,

T. L. SWIFT,

Committee.

ALEXANDER LOCKHART, M.R.C.V.S.L.

We regret to announce the death of Alexander Lockhart, of New York City, which took place, from pneumonia, on the 17th of January. He was born in Glasgow, Scotland, graduated at Dick Veterinary College on the 19th of April, 1865, and at the Royal College of Veterinary Surgeons of London on April 24th of the same year, when he came to New York and at the death of his brother took charge of his extensive practice.

ARMY VETERINARY LEGISLATION.

Editor of American Veterinary Review:

The Military Committee of the United States Veterinary Medical Association beg to report the following progress. The annexed bill has been introduced into Congress:

A BILL TO PROVIDE FOR THE ORGANIZATION AND RATE OF PAY OF A VETERINARY CORPS OF THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

SECTION 1. That there shall be, and hereby is, established, as a part of the United States Army, a Veterinary Corps,

which shall consist of one Veterinary Surgeon-General, with the rank, pay, and allowances of a major of cavalry, who shall be appointed by the President of the United States, by selection, with and by the consent of the Senate; four veterinarians, with the rank, pay and allowances of captains of cavalry; ten assistant veterinarians, with the rank, pay and allowances of first lieutenants of cavalry, and ten assistant veterinarians, with the rank, pay and allowances of second lieutenants of cavalry.

§ 2. That as soon as practicable after the passage of this act the President of the United States shall appoint a Veterinary Medical Examining Board, which shall consist of the Veterinary Surgeon-General, two officers of cavalry, and two officers of the Medical Department, whose duty it shall be to examine such candidates as shall present themselves for examination for appointment in the Veterinary Corps, and shall report and certify to the Secretary of War the names of the candidates who shall have passed the highest examination satisfactory to said Board.

§ 3. That upon the receipt from the said Examining Board of the certificates of the candidates who shall have passed the highest satisfactory examination, the President of the United States shall appoint to the various offices junior to the Veterinary Surgeon-General, the said appointees to take rank according to the order of merit certified by said Examining Board, not to exceed the number provided for in section one of this act.

§ 4. That all veterinary surgeons of the United States Army who, at the passage of this act, shall be in service, may be granted three months' leave of absence with full pay, for the purpose of preparing themselves for examination.

§ 5. That the Secretary of War shall hereafter appoint, from time to time, a Veterinary Examining Board, which shall consist of Veterinary Surgeon-General and two veterinarians of the United States Army Veterinary Corps, to examine candidates for the position of assistant veterinarians, with the rank of second lieutenant and for promotion in the corps.

§ 6. That promotion below the rank of field officer shall be by seniority, but no officer of this corps shall be entitled to promotion thereby until he shall have been examined and approved by a veterinary examining board; and if any such officer fail on examination he shall be suspended from promotion for one year, when he shall be re-examined before a like board, and in case of failure on such re-examination he shall be discharged from the service.

The committee on Military Affairs of the House of Representatives before whom this bill will be considered is as follow :

Messrs. Cutcheon, of Michigan; Rockwell, of Massachusetts; Osborne, of Pennsylvania; Spooner, of Rhode Island; Williams, of Ohio; Lansing, of New York; Snyder, of Minnesota; Kinsey, of Missouri; Spinola, of New York; Wheeler, of Alabama; Sanham, of Texas; Wise, of Virginia; Robertson, of Louisiana; Cary, of Wyoming.

Every member of the veterinary profession is asked to use his aid in placing the importance of this matter before the members of Congress and is requested to report all information he can obtain to the committee.

RUSH S. HUIDEKOPER,

D. LEMAY,

COOPER CURTICE,

Military Committee, U. S. Veterinary Association.

SOCIETY MEETINGS.

LONG ISLAND VETERINARY SOCIETY.

A regular meeting of the Long Island Veterinary Society was held December 18, 1889, at No. 74 Adams Street, Brooklyn, the President, Dr. George H. Berns, in the chair.

The roll being called the following members were found present: Drs. Geo. H. Berns, R. E. Waters, Wm. H. Pendry, Geo. F. Bowers, J. F. Mustoe, E. J. Decker, Wm. A. Engeman, Philip Newman, T. M. Buckley, D. S. Breslin, R. R. Bell, Samuel Atchison.

The minutes of the previous meeting were read and approved.

The Treasurer, Dr. George F. Bowers, made his annual report, in which he shows the society to be in good financial condition,

The Board of Censors reported progress.

The Committee on Army Veterinary Legislation made the following report:
To the President of the Long Island Veterinary Society:

Your committee beg to report that they have given the matter referred to them careful consideration, that they have reviewed all the bills drafted, and have corresponded with those interested; and while it has to be admitted that many of the proposed bills are, in a measure, commendable, for some reason or other they differ in their material points—some of the alterations proposed by veterinarians directly interested seem to have more or less a bearing of individualism. Your committee have, however, discussed and viewed the subject in all its lights from a disinterested point, and while the elevation of the profession in the army has been our object, yet we have not lost sight of the claims of the present incumbents, consistent with that desire.

Therefore, we beg respectfully to submit the accompanying draft of bill, with a request that the same be endorsed by the Society; that copies of it, together with this report, be printed and mailed to the different veterinary associations throughout the States and veterinarians interested, requesting them to return, at the earliest possible moment, their endorsement of the same, so that your committee can arrange to have the bill, backed by such endorsements, introduced at the opening of the next Congress.

All of which is respectfully submitted,

W. H. PENDRY,
ROSCOE R. BELL,
ROD A. McLEAN.

AN ACT TO PROVIDE FOR THE ORGANIZATION OF A VETERINARY CORPS, AND
FOR THE RANK AND COMPENSATION OF THE VETERINARIANS OF THE UNITED
STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

SECTION 1. That there shall be established, as a part of the United States Army, a veterinary corps, which shall consist of one (1) veterinary surgeon-general, with the rank, allowances and pay of a Major of Cavalry, who shall be appointed by the President of the United States; four (4) veterinarians, with the rank, allowances and pay of Captain of Cavalry; ten (10) veterinarians, with the rank, allowances and pay of First Lieutenants of Cavalry, and ten (10) veterinarians, with the rank, allowances and pay of Second Lieutenants of Cavalry; but no one shall be eligible for the position of Veterinary Surgeon in the United States Army, by examination or otherwise, unless he be a graduate of a legally chartered or incorporated Veterinary College or University, except as provided for in Section 6 of this Act.

§ 2. The Honorable Secretary of War shall have power to increase the number of Veterinary Surgeons in the Veterinary Corps as may be deemed necessary.

§ 3. The Veterinary Surgeon-General shall be charged, under the Honorable Secretary of War, with the administrative duties of the Veterinary Corps.

§ 4. Within three months after the passage of this Act the President shall appoint a Veterinary Medical Examining Board, which shall consist of the Vet-

erinary Surgeon-General and two officers of the Medical Department, whose duty it shall be to examine such candidates as shall present themselves for examination, and shall report and certify to the Honorable Secretary of War in their order of merit the names of such candidates who have passed examinations satisfactory to said Board.

§ 5. Within one month after the receipt from the said Examining Board of the certificates of the candidates who shall have passed satisfactory examinations, the President of the United States shall appoint to the various positions junior to the Veterinary Surgeon-General the said candidates, to take rank according to the order of merit certified by said Examining Board, not to exceed the number in Section 1.

§ 6. All veterinarians who at the passage of this Act shall be in the employ of the United States Army may be granted three months' leave of absence, with full pay, for the purpose of preparing themselves for examination; or if they so elect, shall, on the recommendation of their Regimental Commander, be appointed Veterinary Surgeon, with rank, allowances and pay of Second Lieutenant of Cavalry, but shall hold no higher position, except by examination as herein provided.

§ 7. The Honorable Secretary of War shall thereafter appoint from time to time a Veterinary Examining Board, which shall consist of the Veterinary Surgeon-General and two (2) veterinarians of the United States Army Veterinary Corps, to examine candidates for the position of veterinarian and for the promotion of veterinarians to such vacancies as may hereafter occur in the senior positions in the United States Army Veterinary Corps. Promotion to the rank of Captain to be by seniority.

§ 8. Applicants for positions in the United States Army Veterinary service (except such as are employed at the time of the passage of this Act) must comply with the same preliminaries as are now required of candidates for admission to the Army Medical Corps.

§ 9. This Act shall take effect immediately.

To the President of the Long Island Veterinary Society:

Your committee beg to report that they have had printed five hundred copies of the proposed Act, together with five hundred copies of report and circulars, and have mailed nearly the whole of them as recommended in said report.

That your committee have met since the last meeting of your Society, to draft circular and make one or two slight necessary alterations in bill; and your committee are pleased to state that they have received many endorsements of their bill.

That the Chairman of your committee, on receipt of a telegram from Professor Huidekoper, Chairman of the Committee on Army Legislation of the United States Veterinary Medical Association, met him in consultation on the matter of army legislation.

That they together saw Professor Liautard, Editor of AMERICAN VETERINARY REVIEW and discussed the matter fully.

That Professor Huidekoper produced a copy of a bill (which will be brought before the Society at this meeting), which he stated that the army headquarters was in sympathy with, that said bill is in substance the same, except that it does

not give any protection to present army veterinarians, and differs somewhat as to examinations. That both these gentlemen consider that it is very essential that only one bill should be presented to Congress, and that the two committees or representatives of said committee should consult together and agree on a draft of bill to be in substance the same as the one presented by this society.

Your committee have expended the sum of fifteen dollars and sixty cents for printing, etc.

Respectfully submitted,

W. H. PENDRY,
ROSCOE R. BELL.

Moved by Dr. Breslin and seconded by Dr. Mustoe, that the report of Committee on Army Legislation, be received and accepted.

That the chairman of the committee be, and is hereby authorized to represent the Long Island Veterinary Society in a conference to be held with the Chairman of the Committee on Army Veterinary Legislation of the United States Veterinary Medical Association, for the purpose of agreeing upon the draft of a bill to be presented to Congress, which shall be in substance the same as endorsed by this Society, and that he is hereby authorized to accept for this Society such details of said bill as the army headquarters shall demand or that the interest of the measure may be deemed necessary to bring about the desired result.

That the sum of twenty (20) dollars be, and is hereby appropriated to defray expenses of said representative. Carried.

The Secretary was instructed to prepare a report of the condition of the Society, and file it with the County Clerk of Kings County, thus complying with the law.

Dr. R. A. McLean being the essayist for the evening, and being absent on account of the death of his sister, the reading of papers was postponed until next meeting.

The next order of business being the election of officers of the Society for the ensuing term, the following gentlemen were elected to the various offices: President, Dr. Geo. H. Berns; Vice-President, Dr. J. F. Musto; Secretary, Dr. D. S. Breslin; Treasurer, Dr. Geo. F. Bowers; Board of Censors, Dr. R. R. Bell, Chairman, Dr. Wm. A. Engeman, Dr. Samuel Atchinson, Dr. Wm. H. Pendry, Dr. T. M. Buckley.

The following resolution, which was made a special order of business for this meeting, was then taken up, namely:

"Whether members of the profession practicing other than on Long Island are eligible for membership in this Society."

The discussion which followed was participated in by all the members present, particularly by Dr. Geo. F. Bowers and Wm. H. Pendry, and in order to determine the question, the following motion was put before the meeting, namely:

"That members of the profession practicing other than on Long Island are eligible for membership in this Society."

The motion was lost by a large majority, thus confining the membership of the Society to members practicing only on Long Island.

After the reading of a number of communications to the Society the meeting then adjourned.

D. S. BRESLIN, D.V.S., *Secretary*.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The regular meeting of this Association took place on the 12th of January in Newark. A number of Trenton veterinarians were present. An interesting discussion ensued on the bill requiring registration of veterinary surgeons. The topic was called up by Dr. Hamill, lately of New York City. He said that he was in entire harmony with the bill. He believed in it so far as it went, but claimed that it did not go far enough. He thought the profession should have placed a higher estimation upon its character and services than to limit the price of registration to one dollar. The price of registration should have been fixed at ten dollars. This would have added dignity to the cause.

Dr. Miller, of Camden, spoke of the difficulty of getting a bill of any kind through the Legislature, and the Association had accepted for the present what they could get on the principle that the half loaf is better than no bread.

Franklin Dye, of Trenton, stated that there is need of an efficient corps of veterinarians in New Jersey. The horses of this State are valued higher than those of any other State in the Union, and the same is true of the milk cows and beef cattle. We cannot afford to risk the lives of this valuable stock. Concerning the State Veterinary Association, the State Board of Health, the Bureau of Animal Industry and the State Board of Agriculture, they are working on too many divergent lines. They should be brought into closer sympathy of understanding and action as to the sphere and work of each. A vast amount of money is expended for the extermination of disease which does not seem to give corresponding results. Diseases of cattle especially are assuming new complications and are becoming serious. They affect not only the pocket of the owner, but also the consumers of milk, and this is true of diseased pork. This whole subject is one of general interest, and may require further Congressional and State legislation.

An interesting paper on "Swine Plague," was read by Dr. Julius Gerth, Jr., stating that to-day this disease can be found in every State of the Union.

An extended and animated discussion arose over the proper diagnosis of the disease which has been termed by some veterinarians *bovine variola*, or an aggravated form of cowpox, caused by the Buffalo fly; by others a new disease not yet accounted for. Dr. Dunston, of Morristown, said he believed that the milk from these cows is being sold to the public. Dr. Higgins, of New Brunswick, said that he knew that milk from cows suffering from this disease was being sold in the community.

The President was instructed to appoint a committee of five to investigate and prosecute all cases where veterinarians are practicing without being registered.

A committee of three, consisting of Dr. W. B. Miller, of Camden, Dr. Julius Gerth, Jr., of Newark, and Dr. W. H. Cooper, of Trenton, was appointed to attend the next annual meeting of the Board of Agriculture.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The Ohio Veterinary Medical Association held its seventh annual meeting in the Wells Post Hall, Columbus, Ohio, January 15, 1890.

The President, Dr. T. B. Hillock, called the meeting to order.

But fourteen members responded to the roll call. What the meeting lacked in numbers, however, was amply compensated by the vigor and enthusiasm of the few present.

The following officers were elected for the ensuing year: President, Dr. G. W. Butler, Circleville; First Vice-President, Dr. T. Bent. Colton, Mt. Vernon; Second Vice-President, Dr. J. D. Fair, Berlin; Third Vice-President, Dr. W. R. Howe, Dayton; Secretary, Dr. W. J. Torrance, Cleveland; Treasurer, Dr. T. B. Hillock, Columbus.

On account of the fact that an amendment to the Constitution had already been made, preventing the enlistment of non-graduates on the roll of the Association, the examination of whom (non-graduates) was the sole duty of the Board of Censors, it was decided by the meeting to suspend the Board of Censors until the next meeting, when a written resolution abolishing said Board might be voted upon.

Dr. S. S. Snyder, of Coshocton, Ohio, was unanimously elected a member of the Association.

The Secretary presented the correspondence for the past year, which contained among other matters of importance, resolutions prepared by Dr. Tait Butler, of Davenport, Iowa, requesting our Association to urge the United States Veterinary Medical Association to meet in future in some western city, preferably, first, Chicago, secondly in St. Louis.

The resolutions were laid upon the table, and it was decided that our Association urge the United States Veterinary Medical Association to be our guests at Dayton, Ohio. Wm. R. Howe, V.S., of Dayton, (Ohio Secretary of the United States Veterinary Medical Association), was requested to use his influence in furthering the desired object.

The only essayist present was Dr. J. S. Butler, of Piqua.

The doctor read an able paper on "Roaring," discussing the subject in all its phases and describing the operation for the same, as he had lately performed it upon three cases. One of the cases had proved a positive success. The other two cases were apparently equally successful, but the subjects had not yet been put to the final tests. Dr. Butler's paper received well-merited applause from those present.

The Treasurer's report was now presented to the Auditors. It showed a thriving condition of the finances of the Association.

A discussion was now opened upon Dr. Butler's paper and upon the details of his operations, by Drs. Shaw, Wight, Howe, G. W. Butler, J. D. Fair, T. B. Colton and others.

Dr. Torrance reported an unsuccessful operation which he performed upon a roarer.

The subjects of Spasmodic Roaring, Spasm of the Glottis, Choking, etc., were now discussed and cases relating thereto were reported by Drs. Gribble, G. W. Butler, T. B. Colton and J. D. Fair.

"Reports of Cases" were continued for the remainder of the afternoon session, some of the more interesting of which were as follows:

Dr. Torrance reported a case of Rupture of Diaphragm; also a case of a dead foetus which was retained by a mare for over a year in that condition.

Dr. J. S. Butler reported a similar case to the latter.

Dr. Gribble reported the removal of a mummified six-months-old bull calf which had been retained for two years *in utero*.

Dr. Colton reported a much similar case, due to torsion of the uterus in a mare, which still carries the foal.

Dr. Gribble spoke of the prevalence of tetanus among the suckling colts of his county, which Dr. G. W. Butler claimed was due to non-cicatrizization of the umbilicus.

Paralysis of the pharynx and similar affections were discussed by Drs. Gribble, J. D. Fair, J. S. Butler and Torrance.

Dr. G. W. Butler reported some peculiar cases of affections of the vagina of the cow. Among them was one case where he removed a fifteen pound tumor. He also referred to the effects of tracheotomy in the prevention of persistent straining in the cow.

Dr. Gribble referred to the cruelty to which animals were subject by empirics, who offered them forcible assistance in parturition, and Dr. Colton discussed the humanity of delivering cattle.

The meeting now adjourned and re-assembled at 7:30 P.M., when the President, G. W. Butler, addressed the meeting and thanked the members present for the honor they had done him in selecting him for President.

On motion of Dr. J. S. Butler, seconded by Dr. Wight, Dr. Yonkerman's charges of breach of etiquette against Dr. Shaw was tabled, and Dr. Shaw was completely exonerated.

The President appointed the following committees: Committee on Contagious Diseases, Drs. Colton, J. C. Meyer, Jr., and J. S. Butler. Committee on Veterinary Progress, Drs. J. D. Fair, T. B. Hillock and W. Gribble.

Moved by Dr. Gribble, seconded by Dr. Wight, that the Secretary be instructed to correspond with Dr. Salmon, with the hope of procuring a copy of the last report of the United States Bureau of Animal Industry for each member of our Association.

Reports of cases were again discussed.

Dr. J. S. Butler discussed pelvic abscesses, and reported a case of paraplegia due to melanosis of posterior aorta.

Dr. Torrance spoke of necrosis following electric shocks, and of melanosis producing lameness.

Dr. G. W. Butler reported a case of eversion of vagina in one and one-half year-old filly, probably due to shock of lightning.

Dr. Colton described a peculiar disease prevalent upon the river bottoms of Nebraska.

Dr. Gribble reported a chronic case of eversion of vagina in mare.

Dr. Wight reported case of intussusception in horse where twenty-one feet of ileum were found in cæcum.

Drs. Wight and Torrance reported cases of rupture of rectum.

Drs. J. S. Butler and T. B. Hillock reported cases of rupture of uterus in mares.

A few more cases were reported and the meeting was adjourned.

The next meeting will be held at Dayton, Ohio.

W. J. TORRANCE, V.S., *Secretary*.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

At the last meeting of this Association the following officers were elected: President, Dr. Thomas Maclay, San Francisco; Vice-President, Dr. W. E. Morrison, Los Angeles; Secretary, Dr. A. M. McCollum, Sacramento; Treasurer, Dr. W. H. Woodruff, San Francisco. Drs. Maclay, Morrison, Whittlesey, Masoero and Egan were elected examiners of proposed members; and Drs. Spencer, Wadams and Egan, directors.

The following gentlemen were then elected members: Dr. J. Blackinton, Los Angeles, graduate of Ontario Veterinary College; Dr. F. C. Pierce, Los Angeles, graduate of the Chicago Veterinary College; Dr. W. B. Rowland, Pasadena, graduate of the American Veterinary College; Dr. W. J. Oliver, Los Angeles, graduate of the Ontario Veterinary College. Dr. J. K. Witherspoon, after being examined in veterinary dentistry, was also admitted.

Dr. W. E. D. Morrison, of Los Angeles, read an interesting essay on "Wounds and their Treatment." It was followed by a lively discussion, in which all participated.

Letters of regret were received from Dr. Egan, Dr. Orvis, Dr. Masino and others who were unable to be present.

The State Veterinary Society was organized a year ago last April, at San Francisco, and reorganized as a corporation in January last. Its objects are to prevent quackery as much as possible, and extend the scientific practice of animal surgery. The members of the Association are: Thomas Maclay, Petaluma; A. M. McCollum, Sacramento; C. B. Orvis, Stockton; J. P. Klench, Santa Rosa; P. P. Parent, Oakland; H. A. Spencer, San Jose; W. H. Woodruff, Thomas Bowhill, C. Masoero, J. D. Obrock, F. A. Nief, W. F. Egan, Peter Burns, W. H. Jones, J. D. Fitzgerald, all of San Francisco; W. B. Rowland, Pasadena; R. T. Whittlesey, W. E. D. Morrison, W. J. Oliver, J. C. Blackinton, F. E. Pierce and J. K. Witherspoon, of Los Angeles.

The Los Angeles members form a local association with Dr. Rowland as President; Dr. Whittlesey, Vice-President; Dr. Morrison, Secretary and Treasurer. The local society was formed in May last, and meets once each month for discussion of papers. The Los Angeles members, excepting Drs. Whittlesey and Morrison, were admitted to membership in the State Association Thursday evening.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The Comitia Minora of the United States Veterinary Medical Association will hold a session in February, to determine the place of meeting for the annual gathering in September next.

Those desirous of offering inducements or pleas for the place of meeting will be granted a hearing, or any resolutions will be considered, by placing the same in the care of the Secretary.

W. HORACE HOSKINS, *Sec'y*.